

In the claims:

Claims 1-27 cancelled.

28. (New claim) A method of producing curved lengths of spring bend band steel, comprising the steps of bending a spring band steel (10) which is made up of lengths of spring band steel (11) that adjoin one another and are of one piece with one another, between three support points (23-25) which are spaced from each other in a spring band steel advancing direction and rest against alternating band sides of the spring band steel (10); at a subsequent support point (32) downstream of the three support points (23-25), bending back by a lesser bending degree than during the bending by the three support points (23-25) in an opposite direction; cutting the length of spring band steel (11) that is bent from the spring band steel (10); establishing the subsequent support point as a movable reverse bending roller (33); and controlling a movement of the reverse bending roller (33) by a numerical control unit (29).

29. (New claim) A method as defined in claim 28; and further comprising constituting the support points (23, 24, 32) by a circumference of a roller (26, 27, 33).

30. (New claim) A method as defined in claim 28; and further comprising setting the bending degree of the spring band steel (10) in the three support points (23-25) to be greater by the reverse bending degree at the fourth support point (32) than a required final bending radius of the length of spring band steel (11).

31. (New claim) A method as defined in claim 28; and further comprising empirically determining the reverse bending degree.

32. (New claim) A method as defined in claim 28; and further comprising providing the reverse bending degree to be 10-20% of the bending degree.

33. (New claim) A method as defined in claim 28; and further comprising carrying the bending and reverse bending of the spring band steel (10), with continuous advancing of the spring band steel which is temporarily interrupted for the cutting of the lengths of the spring band steel (11).

34. (New claim) A method of producing curved lengths of spring bend band steel, comprising the steps of bending a spring band steel

(10) which is made up of lengths of spring band steel (11) that adjoin one another and are of one piece with one another, between three support points (23-25), which are spaced from each other in a spring band steel advancing direction and rest against alternating band sides of the spring band steel (10); at a subsequent support point (32) downstream of the three support points (23-25), bending back by a lesser bending degree than during the bending by the three support points (23-25) in an opposite direction; cutting the length of spring band steel (11) that is bent from the spring band steel (10); marking the adjoining lengths of spring band steel (11) by trigger holes (12) for controlling beginnings and ends of the bending step, the bending back step and the cutting step.

35. (New claim) A method as defined in claim 34; and further comprising constituting the other support points (23, 24, 32) by a circumference of a roller (26, 27, 33).

36. (New claim) A method as defined in claim 34; and further comprising setting the bending degree of the spring band steel (10) in the three support points (23-25) to be greater by the reverse bending degree at the fourth support point (32) than a required final bending radius of the length of spring band steel (11).

37. (New claim) A method as defined in claim 34; and further comprising empirically determining the reverse bending degree.

38. (New claim) A method as defined in claim 34; and further comprising providing the reverse bending degree to be 10-20% of the bending degree.

39. (New claim) A method as defined in claim 34; and further comprising carrying the bending and reverse bending of the spring band steel (10), with continuous advancing of the spring band steel which is temporarily interrupted for the cutting of the lengths of the spring band steel (11).

40. (New claim) A device for producing curved lengths of spring band steel (11), comprising a bending unit (20) including three support points (23-25) spaced apart from one another through which a spring band steel (10) which is made of the length of spring band steel (11) that are disposed one another and are of one piece with one another, is conveyable so that the support points (23-25) rest against alternating band sides of the spring band steel, wherein the center support point (24) of the three support points (23-25) is embodied so that it is movable lateral to the spring band

steel in order to adjust the banding radius; a reverse bending unit (22) that engages the same band side of the spring band steel (10) as the center support point (24) of the three support points (23-25) of the bending unit (20) and having a support point (32), the reverse bending unit is movable lateral to the spring band steel in order to adjust a reverse banding radius by means of numerical control unit (29); and a cutting unit (21) for cutting the length of the spring band steel (11) which passes through the bending unit (20) and the reverse bending unit (22).

41. (New claim) A device as defined in claim 40, wherein the cutting unit (21) is integrated into the bending unit (20) by virtue of the fact that the last support point (25) of the bending unit (20) in the advancing direction of the spring band steel is embodied as a cutting edge (30) extending over the width of the spring band steel, which a cutting blade (31) is guided past, moving lateral to the spring band steel (10).

42. (New claim) A device as defined in claim 40, wherein the adjusting movements of the central support point (24) of the bending unit (20) and the support point (32) of the reverse bending unit (22) are controlled by means of a control unit (29) in accordance with programs which take into

account the varying material thickness and the possibly varying, predetermined zonal bending radii of the lengths of spring band steel (11).

43. (New claim) A device as defined in claim 42, wherein the lengths of spring band steel (11) following one after the other in the spring band steel (10) are marked by means of trigger holes (12) in the spring band steel (10) which are used to trigger the control unit (29) in order to begin and end the bending and reverse bending programs and to trigger the cutting process by means of the cutting unit (21).

44. (New claims) A device as defined in claim 42, wherein the programmed adjusting movement of the central support point (24) of the bending unit (20) and the programmed adjusting movement of the support point (32) of the reverse bending unit (22) are matched to each other so that the bending degree produced in the bending unit (20) is greater by the reverse bending degree than the predetermined final bending degree of the length of spring band steel (11).

45. (New claims) A device as defined in claim 44, wherein the magnitude of the reverse bending degree is empirically determined.

46. A device as defined in claim 44, wherein the reverse bending degree is selected to be 10-20% of the bending degree.

47. A device as defined in claim 42, wherein an image capturing system (36) is provided for optically measuring the finished lengths of spring band steel (11) cut from the spring band steel (10) and determining the deviation from a preset reference value, and by means of a correcting device (37) for correcting the bending and/or reverse bending program as a function of an average reference value deviation.

48. A device as defined in claim 41, wherein the first support point (23) of the bending unit (20) in the advancing direction of the spring band steel (10) is embodied so that it can be moved, preferably manually, lateral to the spring band steel (10) in the direction of the band thickness.

49. A device as defined in claim 41, wherein the two support points (23, 24) of the bending unit (20) and the support point (32) of the reverse bending unit (22) are constituted by the circumference of rollers (26, 27, and 33).

50. A device as defined in claim 40, wherein the spring band steel (10) is wound on a storage roll (15) and that the spring band steel (10) is conveyed between at least two driven advancing rollers (13, 14), which engage opposite band sides of the spring band steel (10), take the spring band steel (10) from the storage roll (15), and supply it to the bending unit (20).

51. A device as defined in claim 40, wherein a number of rollers selected from the group consisting of guide rollers (16-19) and guide rails are disposed ahead of the bending unit (20) and rest in pairs against opposite sides of the spring band steel (10).

52. (New claim) A device for producing curved lengths of spring band steel (11), comprising a bending unit (20) including three support points (23-25) spaced apart from one another through which a spring band steel (10) which is made of the length of spring band steel (11) that are disposed one another and are of one piece with one another, is conveyable so that the support points (23-25) rest against alternating band sides of the spring band steel, wherein the center support point (24) of the three support points (23-25) is embodied so that it is movable lateral to the spring band steel in order to adjust the banding radius; a reverse bending unit (22) that

engages the same band side of the spring band steel (10) as the center support point (24) of the three support points (23-25) of the bending unit (20) and having a support point (32); a cutting unit (21) for cutting the length of spring band steel (11) passing through the bending and reverse band unit (20, 22); marking the length of spring band steel (11) in the spring band (10) by trigger holes (12) for triggering a control unit (29) for beginning and ending bending with the bending unit (20) and reverse bending with the reverse bending unit (22) and for beginning cutting with the cutting unit (21).

53. (New claim) A device as defined in claim 52, wherein the cutting unit (21) is integrated into the bending unit (20) by virtue of the fact that the last support point (25) of the bending unit (20) in the advancing direction of the spring band steel is embodied as a cutting edge (30) extending over the width of the spring band steel, which a cutting blade (31) is guided past, moving lateral to the spring band steel (10).

54. (New claim) A device as defined in claim 52, wherein the adjusting movements of the central support point (24) of the bending unit (20) and the support point (32) of the reverse bending unit (22) are controlled by means of a control unit (29) in accordance with programs which take into

account the varying material thickness and the possibly varying, predetermined zonal bending radii of the lengths of spring band steel (11).

55. (New claim) A device as defined in claim 54, wherein the lengths of spring band steel (11) following one after the other in the spring band steel (10) are marked by means of trigger holes (12) in the spring band steel (10) which are used to trigger the control unit (29) in order to begin and end the bending and reverse bending programs and to trigger the cutting process by means of the cutting unit (21).

56. (New claim) A device as defined in claim 54, wherein the programmed adjusting movement of the central support point (24) of the bending unit (20) and the programmed adjusting movement of the support point (32) of the reverse bending unit (22) are matched to each other so that the bending degree produced in the bending unit (20) is greater by the reverse bending degree than the predetermined final bending degree of the length of spring band steel (11).

57. (New claim) A device as defined in claim 56, wherein the magnitude of the reverse bending degree is empirically determined.

58. (New claim) A device as defined in claim 56, wherein the reverse bending degree is selected to be 10-20% of the bending degree.

59. (New claim) A device as defined in claim 54, wherein an image capturing system (36) is provided for optically measuring the finished lengths of spring band steel (11) cut from the spring band steel (10) and determining the deviation from a preset reference value, and by means of a correcting device (37) for correcting the bending and/or reverse bending program as a function of an average reference value deviation.

60. (New claim) A device as defined in claim 53, wherein the first support point (23) of the bending unit (20) in the advancing direction of the spring band steel (10) is embodied so that it can be moved, preferably manually, lateral to the spring band steel (10) in the direction of the band thickness.

61. (New claim) A device as defined in claim 53, wherein the two support points (23, 24) of the bending unit (20) and the support point (32) of the reverse bending unit (22) are constituted by the circumference of rollers (26, 27, and 33).

62. (New claim) A device as defined in claim 52, wherein the spring band steel (10) is wound on a storage roll (15) and that the spring band steel (10) is conveyed between at least two driven advancing rollers (13, 14), which engage opposite band sides of the spring band steel (10), take the spring band steel (10) from the storage roll (15), and supply it to the bending unit (20).

63. (New claim) A device as defined in claim 52, wherein a number of rollers selected from the group consisting of guide rollers (16-19) and guide rails are disposed ahead of the bending unit (20) and rest in pairs against opposite sides of the spring band steel (10).